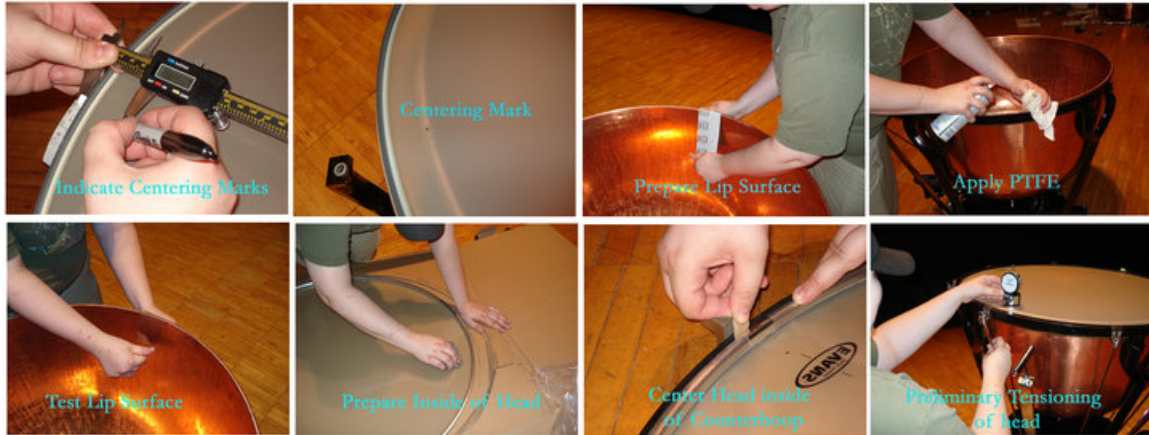


Mounting New Timpani Heads

Seven Steps to Heaven

Theory: Provided the physical integrity of the head is superior, and the mechanical integrity of a timpano is within tolerance, when a strong, sustained principal tone is generated in the extreme low range of the drum (via head centering, even stretching/tensioning), a *harmonicity* of the partials can be maintained throughout the functional playing range of the instrument.

Proof:



1) For each head, determine *centering marks*. Take half the difference of the diameter of the bowl (measured diametrically from lip center to lip center) and the diameter of the head. (e.g. if the bowl is 28" and the head is 31" a) take $31" - 28" = 3"$ b) then $3" \div 2 = 1.5"$ The centering marks will 1.5" from the edge of the head.)

Place a *centering mark* at eight points on the head. The distance between each mark is determined by taking the circumference of the head divided by eight. $X = \pi d / 8$. These marks should line up dead center on the lip of the bowl at eight equidistant points around the head if the bowl is in round. The marks can (if desired) correspond to the individual lug positions when the head has been mounted. The larger the bowl, the more deviation to the tolerances is likely to be found.

If the bowl is found to be not *in-round*, (or the bearing is uneven) steps should be taken to repair or replace the bowl. Proceed to the next steps only if the bowl is found to be in-round, and the bearing edge is even (in plane). If the bowl is in-round, but the head is not evenly centered, it will not be possible to evenly tension the head throughout the range of the drum. This centering step is crucial in the overall outcome of the mounting/tempering process.

Steps two and three should be omitted if the bowl is equipped with Teflon tape. Clean the tape thoroughly with a non-caustic solvent to remove any dirt and grime and buff with a lint free cloth sprayed with PTFE.

2) Prepare the lip of each bowl. If any minor denting is encountered with the bowl lips, use varying grits of wet/dry silicon carbide paper to smooth the lip. Final polish the lip with a 1200 grit paper.

3) After thoroughly cleaning the lip with mineral spirits, apply PTFE spray in multiple thin coats to the lip of each drum. Allow each coat to dry and then gently buffed. Once the PTFE has been buffed, the lip surface should be tested for *squeaks* with a strip of old head by moving around the drum in a *shoe-shine* motion.

4) Even though the under side of Evans Strata heads is smooth, 00000 fine grade steel wool should be used to prepare the inside of the head. It is suggested to do this when using Remo Renaissance heads because they have a strong tendency to make noise when using PTFE unless prepared in this manner. Wipe the underside of the head clean of all residues before mounting.

5) Check the counterhoop liner for wear or severe channeling and replace if needed. Center the head inside of the counterhoop with temporary cardboard tabs (if necessary). Once the preliminary tensioning of the head is done, remove the tabs. The insert ring will make an indent in the material used to line the underside of the counter hoop, helping to keep the head centered in the counterhoop.

6) Mount and center the heads using the *centering marks* described above. Once mounted, seat the heads and preliminary tension them via the use of a Drum-Dial. With the pedals set at the lowest functional pitch of each drum and the master tuning rod engaged at **approximately ten percent only**, set a consistent tension at each lug point with the Drum-Dial. Once the tension at each lug point has been equalized with the Drum-Dial, temper each drum via the use of an electronic tuner and bring to initial pitch with the individual tension rods as follows: 31/32"= B1, 28.5/29 = D2, 25.5/26 = F2, 22.5/24 = A2. At this point, each drum should have a clear, sustained principal tone although the drums are not really useable yet because they are still not in range.

7) Once the heads have had a chance to do some initial stretching, with the pedals set at the lowest functional pitch of each drum, use the master tuner to bring the drum up to the pitch set for the normal pedal placement. Temper the drum by finding the virtual pitch of each lug point via the use of an electronic tuner or your ear if it has been developed to that point.

Notes: With this method, the drums are left at a low pitch for a period of about two weeks (if at all possible) to do some initial stretching. Each day or two, the drums will be checked and brought back up to the initial pitch. Even at low tension, new heads will stretch considerably and yet conform to the lip of the bowl. The objective is to get the heads to stretch slowly and evenly without over-stretching any part of the head. It is imperative to not put too much tension on the head via the pedal or the master tuner until the head has been seated to the lip at low tension. Once a head is unevenly stretched at any point, the integrity of the principal tone is severely diminished especially in the low range.